

AMENDMENT TO THE CLAIMS:

1. (Currently Amended) A method of producing a semiconductor device, comprising the steps of:

forming a non-crystal semiconductor film on a substrate;

heating said non-crystal semiconductor film; and

applying ion beam irradiation to a surface of a recrystallized semiconductor film obtained through the heating step at an angle of incidence of greater than 0° with respect to a direction of normal of the surface of said recrystallized semiconductor film.

wherein projections generated on the surface of said recrystallized semiconductor film is eliminated by said application of ion beam irradiation, eliminating projections generated by said heating on said non-crystal semiconductor film using a physical elimination method.

2. (Currently Amended) A method of producing a semiconductor device according to claim 1, wherein said physical elimination method comprises said elimination of projections through said application of ion beam irradiation is executed using an ion milling method for applying ion beam irradiation to said projections to eliminate said projections.

3. (Currently Amended) A method of producing a semiconductor device according to claim 2, wherein an angle θ formed by an incident direction of the ion beam ~~from said ion milling~~ and a direction of a normal line of a surface of said recrystallized semiconductor film ~~non-crystal semiconductor film~~ is 60° to 90°.

4. (Currently Amended) A method of producing a semiconductor device according to claim 1, wherein said heating step comprises a step process of applying laser beam irradiation for fusing and recrystallizing said non-crystal semiconductor film.

5. (Currently Amended) A method of producing a semiconductor device according to claim 4, wherein said physical elimination method comprises said elimination of projections through said application of ion beam irradiation is executed using an ion milling method for applying ion beam irradiation to said projections to eliminate said projections.

6. (Currently Amended) A method of producing a semiconductor device according to claim 5, wherein an angle θ formed by an incident direction of the ion beam ~~from said ion milling~~ and a direction of a normal line of a the surface of said recrystallized semiconductor

~~film~~~~non-crystal semiconductor film~~ is 60° to 90°.

7. (Currently Amended) A semiconductor device comprising:

a substrate; and

a ~~non-crystal~~recrystallized semiconductor film formed on said substrate,

wherein said ~~non-crystal~~recrystallized semiconductor film has a planar surface formed by eliminating, using ion beam irradiation with a tilted angle of incidence from a direction of normal of a surface of said recrystallized semiconductor film, projections generated on said recrystallized semiconductor film obtained through non-crystal semiconductor ~~film~~ due to heating of said a non-crystal semiconductor film formed on said substrate.

8. (New) A semiconductor device according to Claim 7, wherein an insulating film is formed on said recrystallized semiconductor film having a planar surface through said ion beam irradiation.

9. (New) A semiconductor device according to Claim 8, wherein an electrode layer is formed on said insulating film at least in a partial region to oppose said recrystallized semiconductor film with said insulating film therebetween.

10. (New) A method of producing a semiconductor device according to Claim 1, wherein said ion beam irradiation is applied after said non-crystal semiconductor film is fused and recrystallized through said heating step and before an insulating film is formed covering the recrystallized semiconductor film obtained through the fusing and recrystallization.